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NETTIES (Networking Entities) 2006 was the 12th Annual International Conference organized by EATA – European Association of Telematics Applications, in co-operation with the "Politehnica" University of Timisoara, Romania. The subject of this year's conference was The Future of E: Advanced Educational Technologies for a Future e-Europe, bringing together some of the main issues concerning evolving educational technologies and processes of the new Europe digital age.

There have been huge advances in both technology and education that have affected the knowledge society in the European arena. The convergence of these two disciplines has never been faster and this marriage has affected all sectors of education and the economy. Paradigms such as eLearning, mLearning, just-in-time learning, lifelong learning, multicultural learning, student-centered learning, and collaborative approaches have emerged, and are being supported by technologies such as new communication tools, virtual reality and advanced networking. This new and rapid development has created both opportunities and areas of serious concern. NETTIES Conference themes support the ideas of the Lisbon agenda for the EU to become the world's most competitive and dynamic knowledge-based economy by 2010. The conference was organized in Timisoara, Romania less than some months before EU accession, as an effort to examine the themes from the special perspective of a further enlarged European Union.

90 specialists in Information and Communication Technologies research from the EU countries, USA, Canada and New Zealand participated in the conference to present their up to date research results. At NETTIES 2006 114 abstracts have been submitted, from which 55 were selected by the reviewing committee. 8 keynote speakers (3 from the academic world and 5 representing important multinational companies) have been invited to give their view and experience related to the topic of the conference. The participants presented 22 full papers, 25 short papers, 2 tutorials, 2 corporate showcases/demos. From these papers we selected the following 7 as the most representative of the conference theme.

During the last few years, the field of education has been more and more subject to economy measures all over the world. It has to be able to renew itself, both structurally and pedagogically. The role of networks in a learning environment is becoming more and more important. Educational technology is expected to bring in new solutions for both distance and traditional teaching. The learning environment for individual students is most often the basis for development of new online learning environments. The knowledge society and globalization can be seen as catalysts for change in education throughout society. The education sector which changed most dramatically and continues to change is higher education. In higher education, at the international level, eLearning or online learning is considered now a standard and the emphasis has moved on to effective and efficient eLearning.

Lauri Kurkela's paper from Oulu has been awarded the NETTIES 2006 Prof. Gregory Zeibekakis Award for the Best Paper. He discusses the challenges faced by the today vocational training institutions in developing up-to-date training delivery. He argues that the use of design patterns could be a practical way to capture and communicate expertise related to their learning and training process.

Carmen Taran (ATT) justifies how important is to create an engaging experience for the students involved especially in eLearning. She presents several ways how to create engaging experiences for online students to: personalize, harmonize, de-stigmatize, materialize, sensitize. Very interesting are also the everyday life analogizes which she uses in justifying her ideas.

Andone, Dron and Pemberton introduce the new concept of digital students and present a challenging research on defining their characteristics and use of the online learning environments. They argue that these students 'think differently' and beside their extensive use of technology they are also in strong need for control and independence over the use of their learning environment.

Vasiu, Andone and Bucos leads a team which develops the first Online International Master in Multimedia as a Europe wide degree offered as a co-operation between several universities and companies. They look at the instructional and technology methodology and techniques necessary to develop such a programme.

Maria Kocsis Baan looks at how innovative eLearning solutions can act as a password for the Central and East Europe region to enter the European Higher Education Space.

The team from Kaunas University of Technology (Rutkauskiene, Kubiliunas, Volungeviciene, Butkeviciene) analyzes and evaluate the impact of the implementation of several eTraining services in Lithuania.

Inguglia, Sajeva, Lo Coco and Fidora introduce the new concept of virtual mobilities and trans-national virtual study circles as a result of the implementation of the E-report project.

The last four papers are all presenting the results of several European Union funded projects in the area of Education.

Prof. Radu Vasiu
Scientific Secretary
"Politehnica" University of Timisoara
Romania
NETTIES 2006 Program Co-Chair
radu.vasiu@cm.upt.ro

eLearning and Organizational Learning in Vocational Educational Institutions

Introduction

eLearning related Organizational Learning is the key success factor for vocational institutions in the future society. The focus of this paper is to create shared understanding of the organizational learning process through using Soft System Methodology in the analysing of the problem area and through proposing the use of Design Patterns to create synergy for individuals, groups and organizations.

eLearning and *Blended Learning* are broadly synonyms. They are involved in the flexible use of information and communication technology in learning, teaching, cooperation and working related situations. *Learning Resources* can have pedagogical, functional and content-related features (Kurkela 2006a). Learning Objects are defined as any entity, digital or non-digital, which can be used, re-used or referenced during technology, supported learning (LOM 2000). So Learning Resources are seen here as Learning Objects in a broad sense.

Paradigm refers to the functional model which guides a system or its subsystems. Paradigms have visible and invisible features. *The visible formal side* of a paradigm consists of processes, roles, tools etc.. *The invisible informal side* (culture) of a paradigm consists of customs, values, beliefs, taboos, stereotypes, traditions, language behaviours etc. (Neus & Scherf 2005). *Paradigm shifts* include both the formal and informal features. A paradigm shift must be *Technically Possible* and *Culturally Acceptable* (Checkland et al. 1998, 1999, 1999). Usually the desired cultural change is more demanding than the technological one (Neus et al. 2005). *A successful paradigm shift* requires four elements: (1) pressure for change, (2) a clear shared vision, (3) capacity for change and (4) actionable first steps. If any of these elements is missing, the paradigm shift will fail (de Woot 1996). Paradigms affect to what kind of learning resources are needed. And learning resources affect to what kind of paradigms can be used or developed. Paradigm shifts and development of resources are organizational development tools. (Kurkela 2006b).

Since the year 1974 *Soft System Methodology (SSM)* has been used to create shared understanding of complex real-world situations to guide organizations in their learning processes. Soft System Methodology is often applied as a multilayered analysis. *A complex system* is something more than the sum of its components (Checkland et al. 1998, 1999, 1999). Components are affecting to each others by *paradigms, information exchange and resources*. A complex system also affects on its subsystems and – when it is changed - also the subsystems are changed. Respectively by purposeful paradigm shifts and development of learning resources on subsystem layer the whole system can be coached to desired direction.

The interaction which affects the functional paradigms of a complex system can be called *Critical Interaction*. Critical interactions are often related to situations in which the organization doesn't have any pre-planned paradigms or has development challenges. (Checkland et al. 1998, 1999, 1999). A vocational educational learning organization reacts to critical information by paradigm shifts and/or by developing new learning resources. Through Purposeful Paradigm Shifts and development of learning resources e.g. design patterns an educational institution can seek *Internal and External Synergy Benefits*.

Design Patterns in eLearning are descriptions of good practice in e-learning (E-LEN 2005a, E-LEN 2005b). Here they are used to capture expertise related to learning processes and development of new learning resources. Design Patterns could serve staff members, teacher students and teachers as life-long-learners and vocational students. If the set of design patterns covers the problem area of vocational education, it forms the *pattern language* of that specific problem area.

Synergy is related to the benefits and added value gained in fulfilling the needs of different actors, systems or subsystems in the design of paradigms, resources and value chains. *Synergy Enablers* and *Synergy Disablers* are features which facilitate or prevent the growth of synergy. From one point of view synergy is growing if the (sub)system produces added value for its environment (effectiveness), if the added value is produced using purposeful means (efficacy), if the added value is produced using minimal resources (efficiency) (Checkland et al. 1998, 1999, 1999). From another point of view synergy is growing if an organization is aware of its environment and shares well balanced goals at all levels.

The concept of *Interoperable Competence (IC)* serves our systemic understanding of the target organization and its synergy processes. Interoperable competence guides our attention to: interoperability between actors (persons, organizational levels, networks, levels of the society), ability to serve other actors (on the same or different layer), and ability to utilize services produced by other actors (on the same or different layer) (Pekonen 2002). Interoperable competence includes the views of different organizational layers, interest groups and individual actors. IC supports the concept of *Learning Organization, Competence Portfolio, Knowledge Management, Distributed Competence and Networked Problem Solving.* Interoperable competence includes both *Techno-Structural Interoperability* and *Socio-Cultural Interoperability* (Markkula 2003).

SSM can be applied recursively through following steps:

(A) Analyses of the Current State of the System.
(B) Description of the Major Problem Areas.
(C) Identification of Synergy Enablers and Disablers.
(D) Description of the Desired Future State of the System.
(E) Development Steps towards the Desired Future State of the System.

On the first step (A) you can see a hierarchy of guiding and interacting layers affecting vocational education and the use of eLearning and blended learning. The identified layers are: (1) International, National and Regional Layer. (2) Institutional and Network Cooperation Layer. (3) Curriculum and Course Layer. (4) Layer of Learning Resources. (5) Media Elements and Related Metadata Layer. In this context these layers are a crucial part of the system which facilitates organizational learning. Layers 2 to 5 are visualized in Figure 1.
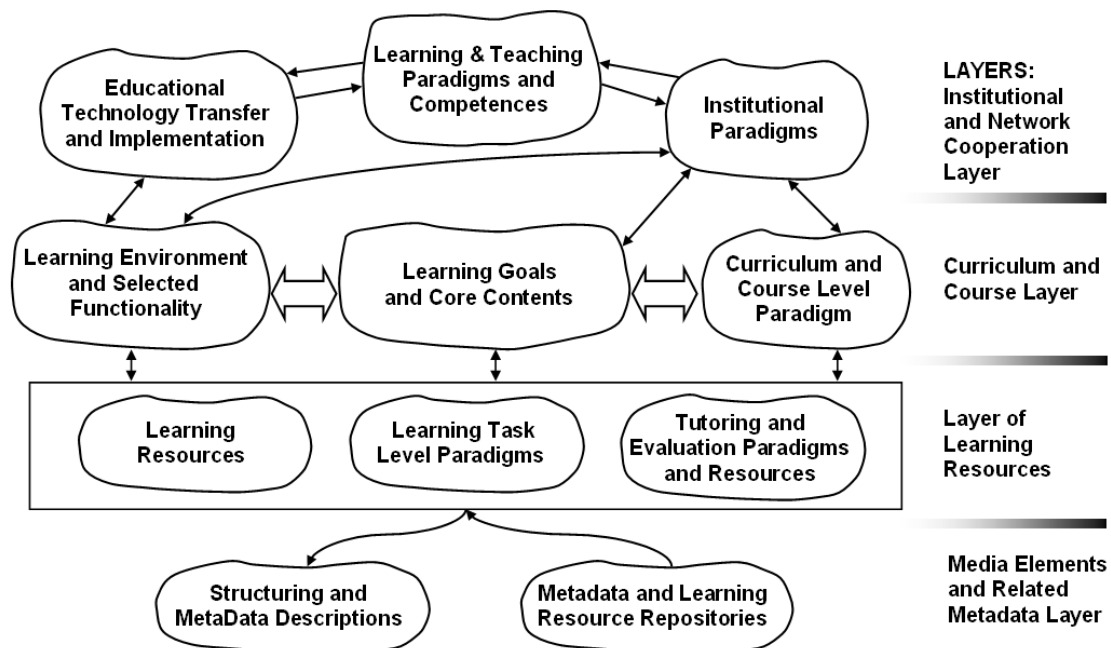
Figure 1: Major Problem Areas

Major Problem Areas

All the identified layers are affecting to each others and the whole system. The use of SSM gives the possibility to describe and communicate those subsystems (problems, development challenges) on each layer which are relevant to the discussed problem area and target organization. Questions has been made to support the recognition of organization specific development challenges. Interoperability between the identified layers and relevant layer-specific subsystems becomes an important issue. Interoperability, relevant paradigms and learning resources are the key factors for synergy and organizational learning.

SSM guides us to identify the major problem areas and related resources on every layer. Expertise related to synergy enablers and disablers could be captured and communicated in the form of design patterns.

Institutional and Network Cooperation Layer

Institutional Paradigms and Resources: Does the educational institution act effectively and purposefully from the point of view of different interest groups? Does the institutional quality system support purposeful action and renewal? Does there exist any taboos, items that are not given attention to although they might be synergy disablers? Is the starting point of the action paradigm in the institution the needs of labour market, society, learners or the existing competence of the staff? Has the competence development of the staff been taken care of with working life orientation? Has the attention of paradigm shifts been paid to different levels of the institution taking into account that 1) There is a clear need for paradigm shift, 2) There is a clear shared vision of what is the desired paradigm shift 3) Whether there are enough resources to fulfil the paradigm shift, 4) If there exists a shared understanding of the first steps of the paradigm shift (de Woot 1996).
Network cooperation of educational institutions:

Does the institution gain and create synergy benefits by participating in network cooperation with other institution of the same or different level? What are these synergy benefits like? Which factors facilitate / restrict the increase these synergy benefits? Does the increase of synergy benefits
require paradigm shifts or development of learning resources? Are the actors ready for the cultural change included in the paradigm shift? Has the directors of the institution committed to network cooperation? Have the goals been defined for the network cooperation on the different levels of the organization? Has the network cooperation been resourced?

Does the institution respond purposefully to the challenges of work life given to different groups of workers? Does the institution participate actively in the developmental challenges of work life? Which factors facilitate / restrict the increase of synergy benefits connected to the educational institution – work life cooperation? How well does learning-on-the job (practicing, projects) support the development of vocational identity and the readiness for supervising work processes? Does the institutional paradigm support the learner's vocational growth and lifelong vocational learning?

What kind of weaknesses do the staff and individual teachers have in the field of eLearning and blended learning? How the eLearning related competence of the teaching staff is developed?

Learning and Teaching Paradigms and Competence: What is the institutional learning and teaching culture like? How could it be revised? What kinds of problems are related to the pedagogical competence of staff members? How can the pedagogical competence be revised? How well do teaching and learning related paradigms support the realization of the institutional level paradigm? Does the collegial support and cooperation work? What kinds of problems are related to the learners with special needs? How well do the recognition of competences and individualization processes work? How fast will the learners with learning obstacles be recognized? How fast and successfully they will be supported?

Educational Technology Transfer and Implementation: The current state of educational technology: How does the current educational technology affect the institutional level paradigms and prerequisites of network cooperation as a facilitator or restrictive element? How are the possibilities of educational technology recognized? How will new educational technology be utilized? How will the support processes of the new or utilized educational technologies be organized? How will the utilization of educational technology related competence be developed?

How does the information and communication technology related strategy guide the use of educational technology? How does the strategy guide the development of reusable learning resources? Will the strategy be renewed sufficiently often? Does the strategy lead to development activities? How is the realization of the strategy followed?

Curriculum and Course Layer

Learning Environment and Selected Functionality: What kind of learning environment supports the attainment of the learning goals? How should the learning resources be used to support the teaching and learning processes?

Learning Goals and Core Contents: Have the goals and core contents of the courses been described so concretely and clearly that it guides both the learning, teaching and assessment focusing on the core elements from the point of view of the course, curriculum and vocational work processes.

Curriculum and Course Level Paradigms: On the course level, the paradigms are chosen to follow the paradigms of institutional and cooperation network levels. Course level paradigms can be used as tools for developing institutional level paradigms. By developing new paradigms for courses and by cutting off non-relevant paradigms the institutional paradigm can be guided to desired direction. There might be a selection of possible paradigms for a single course. If the paradigms are familiar to teachers and learners, they will increase the effectiveness of the learning process. The actors will have a preconception of how to act in a course following a certain paradigm Have the curriculum and course level paradigms been described so that they act as shared contracts? What kind of teaching, learning and support activities are expected? Are these paradigms both on curriculum and course levels based on the analysis of the learning process? Will these contracts be utilized when the success of the learning process is evaluated on curriculum and course levels? Do these contracts support the development of teaching and learning related paradigms? Is the required learning process and the respective load of the course on the purposeful level from the point of view of learners and teachers?

Layer of Learning Resources

Learning Resources: Learning resources can be understood in this study as the resources of teaching, learning, cooperation and educational administration. These resources can have pedagogical, functional and content related features. The latter features do not necessarily exclude each other; instead, they can be emphasized in different ways due to situations. Will the learning resources be targets of cooperation within an institution, in networking between institutions and in the cooperation between institutions and working life?

Learning Task Level Paradigms: Learning tasks are the most central resources guiding learning processes. They can be designed and/or selected by educational planners, teachers, learners or groups of learners. They are used to respond to the needs of different learners and learner groups.

Tutoring and Evaluation paradigms: Do the tutoring and assessment paradigms and the resources related to them help to focus on the core contents of the course and curriculum? From the pedagogical point of view, the most important learning resources are just below the course level: learning tasks, substantial or functional learning resources as well as other resources connected to tutoring and assessment. Are learning resources targets of pedagogical cooperation?

Media Elements and Related Metadata Layer

On which level of granularity educational metadata can be applied purposefully. Does the structure of the learning resource repositories and metadata repositories support the re-use of learning resources?

Synergy Enablers And Disablers

The present writer believes that the questions presented earlier in this paper could help educational institutions to find out the synergy enablers and disablers in their own organization.

On the international and national layer the most important synergy enablers are probably related (1) to the development and adoption of eLearning standards and (2) to the growing open-source cooperation in the area of eLearning and (3) to the internationalization of education and degrees.

On the institutional and network cooperation layer the most important synergy enablers depend on the characteristic features of the vocational educational organization.

On the curriculum and course layer the most important synergy enablers are related to educational design: specification of learning goals, purposeful selection and utilization of the technology supported learning environment and its functionality.

On the educational content and related metadata layer the most important synergy enabler is Linux-like cooperation in the development and pedagogical use of learning resources (learning tasks, functional and content related resources, tutoring and assessment paradigms and resources) and pedagogical metadata.

On the media elements layer the most important synergy enablers are related to structuring learning objects, interoperable learning object repositories and metadata repositories.

Conclusion

Vocational institutions have to renew their teaching and learning paradigms and resources to meet the needs of future work life and learners vocational growth. In this paper the first steps of SSM are described to help vocational educational institutions to manage their eLearning related organizational learning process as a systematic purposeful process. The use of Design Patterns could be a practical way to capture and communicate expertise related to this learning process

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Lauri Kurkela, M.Sc.
Senior Lecturer
Oulu University of Applied Sciences
Finland
lauri.kurkela@oamk.fi

From Dull Services to Engaging Experiences

I like going to the dentist. Yes, you read this right. I used to have the "I-hate-going-to-the-dentist" attitude until a few weeks ago, when I went for a routine check-up. The chair I was dreading had been exchanged for one that massaged my shoulders and back as I was waiting. A TV monitor was placed in my room and played my favorite movie. A scented candle was releasing an enticing cinnamon smell. What was going on? The comfortable distractions the staff had created erased most of my negative feelings. Typically, when I leave the dentist's office, I feel like I've been run over by a truck. This time I felt like I had gone to a day spa. What an experience!

So I figured that if dentistry can reshape its face and turn into a spa, so can we refresh our approach and turn our training services into memorable experiences. Do you ever create online products and services that leave your students numb, much like old dentistry used to? I know that I am guilty of turning quite a few students into frazzled customers. Our commitment should be to turn our students from phobic "patients" to pampered consumers.

Here are several ways you can create engaging experiences for your online students.

Personalize

Today's modern student (the digital student) demands individualized instruction. To accommodate this request, consider supplementing learning management services (LMS) with portal technology. A university or corporate learning center or any type of educational provider should allow the student to have access to information which they can arrange and view according to their needs. The digital student expects to have access to blogs, and RSS feeds, and forums, and photo galleries, and bookmark sharing, and auctions, and classifieds.

Students demand portal frameworks where they are allowed to customize the interface and be able to access it via various media (phone, PDA, or iPod). Portal technology enables you to do just that.

Harmonize

When you create a student experience that includes different components (viewing, sharing, and tagging files, socializing, or blogging), make the components look like they are part of the same entity, the same organization. To achieve this, tie various parts of the student experience with a theme. Wondering what theme to select? Learn from businesses such as Hard Rock Café or Barnes & Noble book stores or Disney Land or Las Vegas hotels. They do a great job harmonizing their customers' experiences by selecting a theme.

How do you harmonize elements on line, in an educational site? Once you have selected a specific message you wish to convey (e.g. laid-back/playful, technical, or super professional), make sure that all the elements in that site (and all the elements that are part of the student experience) re-enforce your message. The selection of graphics, fonts, images, and layout—they should all support your message. Harmonizing with positive and consistent cues enables you to create a pleasant student experience.

De-stigmatize

To de-stigmatize means to eliminate anything that could distract from, contradict, or diminish the theme you selected. Remember how some dentists are now trying to convert your impression of their office and convey the day-spa atmosphere? That's one of the greatest de-stigmatized experiences.

Next time you are at a hospital, business office (especially the ones that deal with unpleasant functions, such as car insurance), hotel or restaurant in highly competitive areas, try to spot ways in which the owners de-stigmatize the experience. Were you surprised because something you expected to take 2 hours took 10 minutes and you were served cookies and coffee too? When you entered the restaurant, were you told that "your adventure was about to begin" instead of "your table is ready"? Were you surprised because the phone bill was not inflated during your last hotel stay?

In online education, we too can de-stigmatize the student experience. How? First, let's think of the many ways we alienate students: limited search capability in the materials we provide, courses that take four hours to complete, reviews that contain 92 questions, messages that advertise "this is screen 1 of 89"… Polling students

on their online experiences is a good way to start de-stigmatizing. In addition, build awareness about students' online habits through different methods—student calls, logged errors, measured trends, Web analytics, or systems management alerts. Data that results from such research will certainly help you eliminate things that detract from or diminish the student experience.

Materialize

Events or experiences worthy of remembrance are typically accompanied by memorabilia (i.e., souvenirs). We often purchase goods because of the memories they convey (do you still have a CD from the last concert you attended or an Eiffel tower knick-knack after your trip to France, or your photo with famous star at the wax museum?).

Consider creating memorabilia related to your online courses and learning services you offer. Posters that exemplify the functionality and reach of your LMS, mouse pads that show the interface of an important Web-based course, mugs with logos that remind them of the importance of online training ("there is no place like home.learning.com").

During face-to-face classes, you gave your students a certificate; it was something tangible that they could hang on their walls and people would stop by ask questions about it. In online education, you can still build memorabilia to enable students to connect with a particular experience and make your efforts worthy of rememberance.

Sensitize

The more effectively an experience engages the senses, the more memorable it will be. If you go to a restaurant like Rain Forest Café, you will notice the four-sense water mist: you can see it, hear it, feel it on your skin, and smell it. At a place like this, you're part of a rain forest, temporarily removed from civilization, enchanted by all the sounds and visuals. Food is just a prop.

Your online students crave the same type of experiences. They like rich visuals. They like sound. They are attracted to animation. The more senses you involve in the learning experiences, the better the learning transfer. And because the computer may be limited in the senses it can provoke, consider combining computer-interactions with human interactions, like asking students to interact with people in real life (e.g., ask them to interview a business manager in their area for a class report). Get the students away from the computer so that they can experience all five senses as they learn.

Generally, creating memorable experiences for your students will enable you to transform unhappy students into satisfied ones, charge premium prices for your courses, and overall obtain greater revenue per customer/student. You will also stay competitive because you know what it takes to provide rich, compelling experiences.

And when someone tells you "I look forward to seeing the dentist", you will not be shocked because you too will be in the business of staging experiences.

Dr. Carmen Taran
AT&T
USA
Carmen.taran@att.com

Dr. Constantin Taran
Tibiscus University
Romania

The DIMPLE (Digital Internet and Mobile Phone e-Learning Environment) – a dual device research methodology

Introduction

The major impact on our life of the last quarter-century is the digitization of virtually all aspects of life - something Negroponte has called the "change of atoms into bits and pixels"[1]. However, for the generation born after 1980 the digital world is even more present and pervasive than for the rest of us, for them it is the only world they know. They are the 'digital ones' or the 'N-Gen – Net Generation' [2]: children or teenagers who have lived all their lives in a changing but (from their perspective) a predominantly digital world. Significantly, most students in higher education now belong to this group. We identify these students as a special group due to its characteristics [3] and we consider that this community has different learning habits.

The research described here is part of a larger project to investigate how adaptive and adaptable eLearning spaces might influence and be influenced by these digital students' learning attitudes and abilities, which may well be very different from those of their predecessors [4]. The final target of the research is to build and test an eLearning environment aimed at their needs, based on the assumption of an 'ecology' of learning as defined by Seely Brown [5]. As part of this process an online survey has been created to investigate the level of e-literacy of young adult students in an attempt to identify the unique features of 'digital students', as a move towards building a customized model of an eLearning environment. As part of this process, online surveys in universities from the UK, Romania, Finland and Hungary, followed by focus groups, interviews and observations of students in traditional and online learning environments, were used to investigate the level of e-literacy of young adult students.

Digital Students

From our research perspective, 'digital students' are defined as young adult students who have grown up with active participation in technology as an everyday feature of their lives. Among the characteristics that define digital students are that they take the availability of email, instant messaging and text messaging for granted, and use unlimited online resources. The digital world has had a significant impact on their cognitive functions [6]. They expect to try things rather than hear about them. They want to learn by doing - usually just by trying things out [2] from which they develop understanding by synthesis. They tend to learn visually and socially [7]. Using technology to organize and integrate knowledge feels normal to them, as well as "doing rather then knowing" [8].

They will have very specific needs and expectations from their learning environments. They will enjoy enhanced interactivity and connectivity with others, and expect to learn in groups which may be physical or virtual [9]. As a result of their powerful access to digital media and to the endless information on the Internet they have learned to access facts and to assess them in particular ways; and to be able to process so much data, they need to synthesize. "In our generation, we reach for the manuals-if we don't know how to do something, we ask," says John Seely Brown[10]. However, digital students will engage in searching for information sources and, quite often, for other people on the Internet and based on this they will construct new structures and new information [11].

Their learning expectations are different due to new cognitive patterns that they have developed over their school years [12]. Treating the Internet and mobile phones as normal tools means that collaboration is an area of great potential for digital students. Using instant messaging, e-mail and text messages via mobile phones they're able to create, join, leave and rejoin at will, what the Pew Internet group calls "virtual study groups"[13]. These groups can be synchronous or asynchronous but the 'feeling' is of instant communication. This has led to a continuous need for instant feedback which is also found in their learning attitudes.

Despite the traditionally restrictive educational settings in which they often have to function, today's students perceive their learning environments as boundless. They tend to use physical space differently from prior generations and they blur the boundaries between physical and cyber space and between mine, yours, ours, and everyone's [14].

They simply 'think differently'.

Research methodology

The research implied an online questionnaire, observation of students' activities, focus groups and interviews, as a multi-faceted research effort to explore the idea of a digital student profile, and explore also how learning technologies could be tailored to match that profile. The online questionnaire[15], with focus on 'Technology in Education' was created using standard research techniques based on quantitative and qualitative research methodologies [16]. The target group initially was young students 18-21 years old in universities from Great Britain, Romania, Hungary, and Finland [17]. In fact, within the student population we found respondents from a wider range of age groups than planned, to include people who had not necessarily grown up with ubiquitous internet and mobile phone use. Themes covered were digital literacy, Internet use, mobile phone use, learning attitudes, visual use, and IT expectations. It also gathered identification data about the questioned students, to aids us in our tentative attempt to identify different cultural and gender characteristics of the digital students [18].

Two focus groups were run in March 2005 to gather in-depth, qualitative information, opinions and attitudes about the digital students' characteristics and the proposed DIMPLE scenario. Fourteen participants took part in the study, in two groups, of six in the UK and eight in the Romania (ages 18 to 24, both genders five nationalities). The interviewer moderated the discussion using an outline based on the same topics as the survey (digital literacy, Internet use, mobile phone use, learning attitudes, visual use, and IT expectations) and on the proposed scenario. The informal discussion lasted two hours and was recorded video and audio for further analysis.
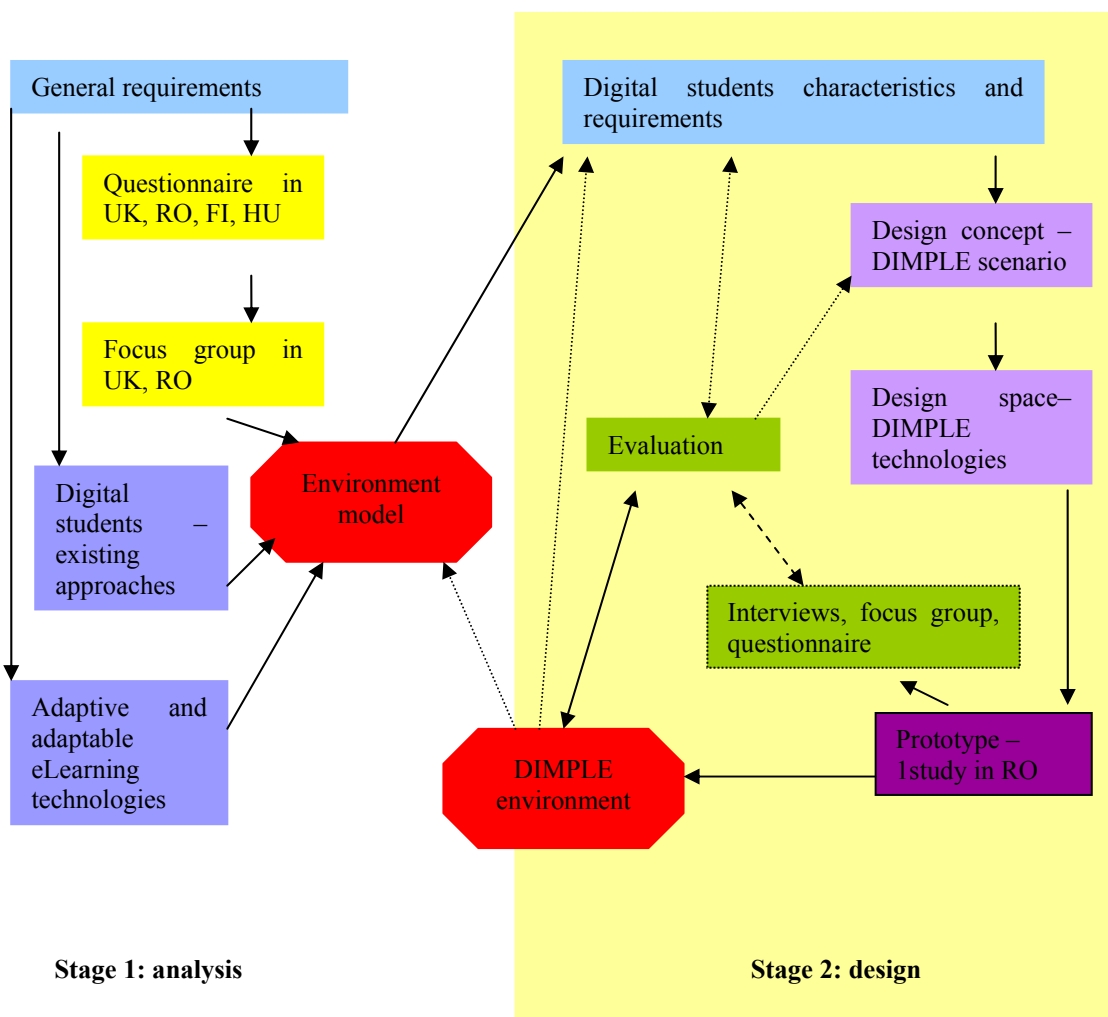

Figure 1. The research methodology of DIMPLE

Socio-cognitive engineering research

The research method adopted in this research comes from the dialectical version of user-centred design, called *socio-cognitive engineering*, proposed first by Sharples and colleagues [19] for designing human-centred technology, and used by several others [20], [21] in the last years, especially in learner-centered language learning.

As a result, we adapted the Sharples methodology with the multi-methods approach and we came with the project methodology which is represented in Figure 1. The design process is mainly represented by the analysis stage and design stage.

The first stage, the analysis and the establishment of the environment model, is mainly based on field studies which borrow the methodology from the social-science field, e.g. through interviews, questionnaire, focus groups studies etc. We investigated and tried to understand if digital students exist in our groups, their characteristics, the theories and technologies in use in adaptable and adaptive learning environments. This was done via theoretical investigation and empirical studies to see how technology is used and its cognitive, instructional and social implications. The result leads to the creation of a task model – the learning environment model.

This model then bridges a cycle of iterative design and evaluation in order to give us the specification of an environment which answers our research hypotheses. In the design stage, the methodology is more technology oriented and gives us the first prototype – a study with some technical developments performed on one student group in Romania. The evaluation of this study allows us to map the affordances and specification of DIMPLE as well as proceed to a final development. Finally, DIMPLE will be evaluated according to the digital students' characteristics and requirements. This methodology can provide a sound instructional, organisational and technical framework for the design of an adaptable and adaptive eLearning environment.

Digital Students characteristics

The full results are presented in [3, 14, 18] but the main characteristics of the digital student, as result of our research, are:

- a high use of technology (computer, Internet, mobile phone) and technology is firmly embedded in the students' lives
- technology is part of their education and also of their social life, both as individuals and at group level
- using technology for communication
- an increased need for synchronous communication, but with asynchronous communication still very much anchored in their lives
- a strong emphasis on search methods
- development of strategic-thinking
- mobile phone is perceived as a familiar and informal tool (SMS is increasing as a preferred communication tool)
- strong need of 'instant response'
- need to control their online and eLearning environment
- direct participation and control over certain aspects of the educational process
- a preference for direct activities problem-solving
- students prefer the richness of face to face interaction and they will prefer to communicate online or via mobile phone just with people which they already know.

The results were correlated with other researches for comparison [7, 11, 12, 22-25] .

Conclusion

We have refined the commonly-held concept of the digital student to include the need for control and independence in the use of e-learning environments. What technology can we identify as the most digital so the use of it will determine the digitalness of our students? Is it instant messaging, sending text/multimedia messages on mobile phones, playing games online or on the phone, learning online or searching for information mainly online, socializing with the support of technology? We think that is a combination of all of these and that the

perceived common benefits of these technologies are a) instantaneity and b) control over the environment. [17] Students want to be able to choose what to do and when and they are demanding it 'now'. It has direct implications for the design of an e-learning environment which ought to include adaptable elements wherever possible, under direct student control, rather than those controlled by the tutor or the system.

The study results played a key role in directing the overall e-learning strategy of our development and influenced some major decisions. One such decision concerned the appropriateness of formal learning structures for Internet and Mobile phone based services. Many scenarios for this type of learning have concentrated on formal learning, presented in a traditional university setting, possibly even in the context of an undergraduate curriculum or class [22, 26].

Our study suggests that DIMPLE may be more suitable for life long learning than institutional learning, or as part of a blend of face-to-face and e-learning strategies. The scenario responds to many of the requirements of the focus group, students can choose to take advantage of one device without the other, and scaffolded learning opportunities can be provided to suit learner motivation and knowledge level.

The survey results suggest that students are as much a driving force behind a traditional instructivist approach to teaching as victims of it. By providing an alternative based on a profile of digital students' interests, we hope to enable uses of technology that provide a better fit to their needs, and a means to break out of habitual behaviours that may not always be the most effective means of learning available to them.

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Diana Andone, Dr. Jon Dron and Dr. Lyn Pemberton
University of Brighton
United Kingdom
D.M.Andone@brighton.ac.uk; Jon.Dron@brighton.ac.uk; Lyn.Pemberton@brighton.ac.uk

The implementation of an International master in Multimedia – a model for a Europe wide degree

Introduction

Higher education of Europe faces several challenges – the Bologna Declaration, Lisbon Agenda, lifelong learning, ICT – and all the dramatic changes and processes they have induced [1]. The Bologna Declaration and the entire process which followed in all the EU countries, aims at answering the challenges of globalisation, and mainly to establish the European Higher Education Space; the Lisbon Agenda intends to increase the responsibility of education in improving competitiveness[2]; the recent success of lifelong learning impose higher education to change the mission and widen their strategy; and the rapid raise of Information and Communication Technologies changes how we teach and how we learn, opening up unique possibilities for networked learning communities in a globalised learning market [3].

International Master in Multimedia

The general European tendency [3] of the extension of eLearning into mainstream education and training, is also starting to be seen in Romania. EC supported projects (especially Phare and Socrates) act as a starting point for consortiums of trans-national partners engaged in a common educational venture.

After being involved for the past 13 years in more then 26 EU projects, the team at UPT-CSID initiated last year, together with other European partners, a new specialization, International Master in Multimedia, planned to be delivered through eLearning. The International Master in Multimedia –IMM– will target young graduates from areas such as ICT and journalism wishing to increase their skills, unemployed graduates in other disciplines wanting additional skills to improve job prospects and those wanting to change careers. The course will be adaptable to different national requirements, but ensuring the same level of skills all over Europe. The academic curriculum is in line with the objectives of the Bologna process: Master of Science gained by acquiring 120 ECTS through two academic years, spread on 6 core subjects, 10 optional courses and a practical project.

The project will involve a wide range of pragmatic, operational level collaboration across a network of EU and CEE countries by establishing a co-operation in international course development and delivery:
- «Politehnica» University of Timisoara, Romania, - project co-ordinator
- Universite de Nice "Sophia Antipolis", France,
- JME Associates, United Kingdom,
- Kaunas University of Technology, Lithuania.
- e-Collegium Foundation, Hungary
- Szent István University, Hungary
- Mimoza Communications Ltd, Hungary,
- St. Poelten University of Applied Sciences, Austria.

The academic programme will be delivered using open and distance learning methodologies through the online platform COEDU [7] (a user-friendly e-learning material editor / client application and content delivery server application). The COEDU will be enhanced with several new features (instant messaging, text messaging to mobile phones, adaptable study testing areas) which is hoped will enhance the students educational experience. The educational material will be developed by joint groups of experts from the consortium on the student-centred principle and using interactive multimedia features.

It is hoped that this model of international content development and simultaneous online delivery in several European countries will overcome some of the main threats to eLearning in CEE countries (inadequate capacity in one institution, the scarcity of Internet access, high start-up costs). The IMM is intended to test the capacity of eLearning expansion in Romania and other Central and Eastern Europe countries.

IMM Academic Course model

The Master of Science in Multimedia course allows professionals to upgrade their knowledge and expertise in the new field of multimedia. The course is designed for professionals with a technical focus who wish to learn

more about multimedia technologies and applications. The Master in Multimedia is a two year on-line programme (according to current national regulations) involving course-work, practical work and a graduation thesis. The Master of Multimedia program has an interdisciplinary approach with on-line courses, tutorials, practical assignments offered by the involved faculties in all the partner institutions. Each course will be supervised by a course leader, who will be responsible for running the course internationally and for developing the course materials. Locally, s/he will be assisted by selected course tutors. Each course will be a balanced combination between the one possible face-to-face session, live sessions and independent study. Each course will have assessments and will end with a final exam which can be online or face-to-face done in the local centre. The presentation of the graduation thesis will be organised by local support centres, as a face-to-face examination. The principle is to move part of the jury to each country on this occasion, not the students. Socrates Erasmus exchange agreements are used in order to use mobilities for professors and students. The final project must be prepared in collaboration with a company or a laboratory, with practical elements and should be completed in not more than three months.

Core courses goals to be achieved by the students are:
- understanding of multimedia technologies: Internet, media-rich, mobile
- understanding of Internet and World Wide Web in terms of purpose, functionality, native Web technologies
- understanding and application of the multimedia applications development
- use and development in: Website development, CD application development, Object oriented programming, graphics, project management.
- Web Servers LAMP (Linux-Apache-MySql-Php)

All the course information is stored in the IMM online Application and can be accessed / edited by the students, tutors and professors. (Figure 1).
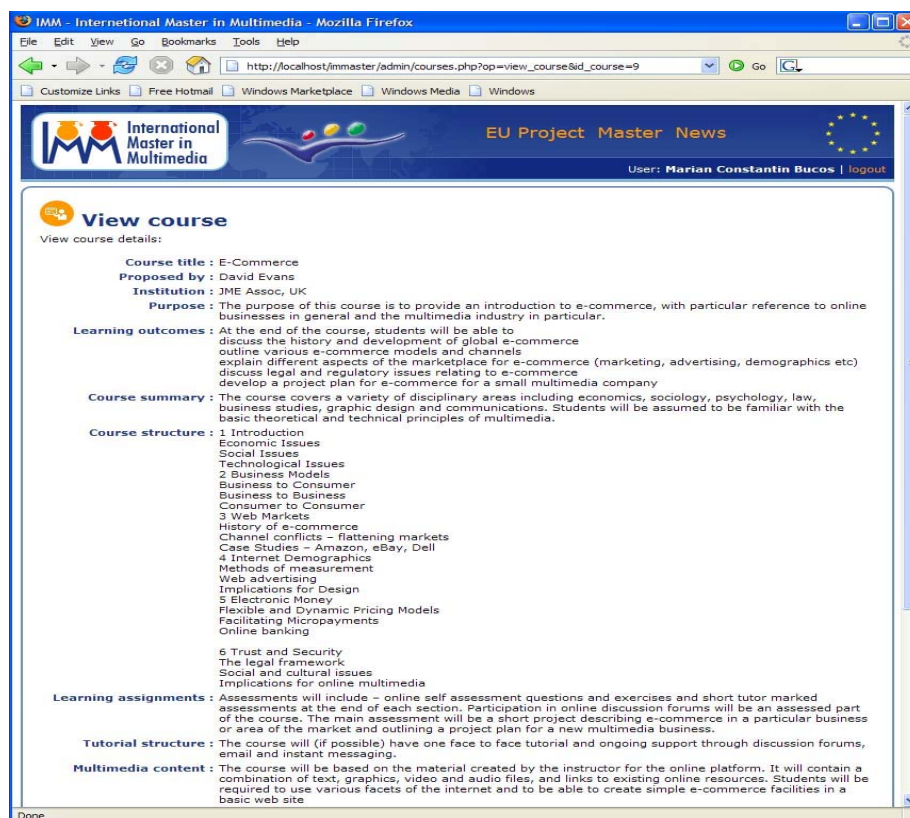

Figure 1 – The course information page with direct link to the course materials

IMM Online Application

Student support is a very important part of a successful eLearning programme [4]. The support which the IMM partners will offer to its IMM students can be split into general and personal support. General support is offered

through the learning package (a combination of text based books and online course materials), access to the university computers in local centers, general information online. But recent years have proved that our students need more personal support provided on an individual basis. The combination of regular student management and the Web led to completely new administrative procedures that will help the partnership to achieve its goals in providing adaptive student support in the same time with assuring the quality of the education process.

The IMM online application is built as an eLearning environment, and hosts specific tasks (figure 2):
- Educational information
- Calendar and news
- Course delivery – all courses are delivered online using the COEDU environment [5]
- Resources
- Collection and distribution of marks
- Student counselling - Forum and mailing list.
- Communication – email, instant messaging, Web-SMS, blogs

We designed the application as a database to store different kind of data, separated in 12 tables: curricula, courses, exams, planning, presence, meeting, homework, ratings, marks, student, teacher, and communication. To access these data on the MySQL Server we created a user account for the application and we granted privileges to users only for the database and tables they need to use. The access to the database is personalized for each student, professors, and tutor through a secured password interface.
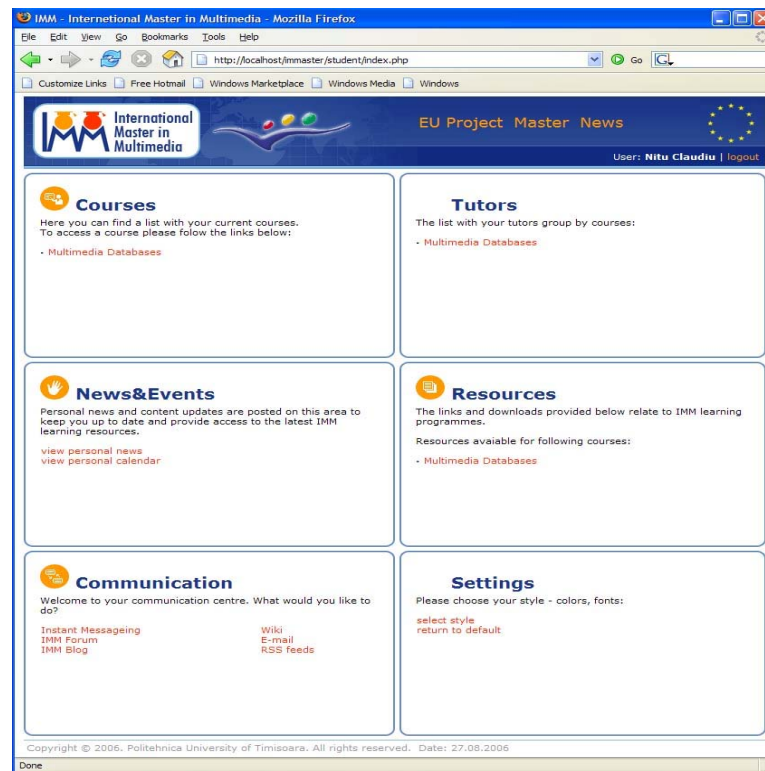

Figure 2 – The IMM interface for student access

Sessions were designed to offer a way to transfer user information on the web. The HTTP protocol used on the web is a stateless protocol. This means each request made to a web server is independent of all the other requests. We used this idea of session control so we are able, in an easy way, to track a user during a each single session on the web portal.
The IMM course is run on www.immaster.net.

Conclusion

In the medium and long term it is very likely that eLearning will be implemented in Romanian educational institutes. A need has been established for developing eLearning environments, especially for high level courses (e.g. IMM, MBA, other master programmes) as well as for continuous training for employed people.

At regional and national level, the "Politehnica" University of Timisoara is at the avant-garde of technical higher education. UPT was groundbreaking in certain fields, and it was the first in Romania to introduce high-tech specializations, and then to offer them through Distance Education, the first one to offer an online master degree and also a double-degree European diploma. And its success can be used as a springboard to perpetuate innovation in education in Romania.

All the higher education institutions in Central and East Europe region recognised: if they simply consider to close up to the universities of well developed EU countries by implementing the Bologna system and following the development process they have already achieved, it will not be enough for entering the European Higher Education Space. Developing innovative methodology and ICT applications may enhance their chance to play active role in the mainstream of European HE progress. Among different innovative solutions, this unique academic programme at Master level which builds a bridge between the West and East Europe will enhance the chances of a integrated academic environment and of a joint-diploma.

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Prof. Radu Vasiu, Diana Andone, Marian Bucos
"Politehnica" University of Timisoara
Romania
radu.vasiu@cm.upt.ro ; diana.andone@cm.upt.ro; marian.bucos@cm.upt.ro

Innovative E-learning Solutions – "Password" of CEE region for entering the European Higher Education Space

Abstract
Several European Union programmes aims to support the development of European dimensions in Higher education – however the majority of initiatives remains at temporary, project levels. Analysing the reasons, several barriers have been identified – solutions for some of them can be found in innovative, creative ICT applications. E-learning – as complex system of such ICT solutions - has become the mainstream of education in the majority of EU countries and shows dynamic development in Central and Eastern European countries as well. More and more EU programs and projects support initiatives for enhanced cooperation of Higher Education Institutions, however long term impact and sustainability realised by these projects are relatively poor. Methodology and results of two EU projects are introduced as a promising experience in multilingual course development and networked, international delivery.

Introduction

Higher education of Europe faces several challenges – even if we mention just a couple of words: Bologna, Lisbon, Lifelong learning, ICT – and we all know how dramatic changes and processes they have induced. Bologna-process aims at answering the challenges of globalisation, establishing the European Higher Education Space, demanding goals of Lisbon increases the responsibility of HE in improving competitiveness, LLL forces HEIs to change their mission and widen their strategy – and integration of ICT changes how we teach and how we learn, opening up unique possibilities for networked learning communities in a globalised learning market. How far we are from the ivory towers of traditional, old-style, elitist universities! But are these changes indeed so well progressing, or are they still declared only in policy papers and published in conferences "best practice" sessions – leaving our everyday life unaffected?

Sharing of experiences should be recognised as an increasing demand – experiences performed in EU joint projects and lessons learnt by them may accelerate the slow reforms especially in CEE countries.

Challenges of Higher education in CEE countries

HEIs in Central Eastern European region have to recognise to be even in a more complex and dramatic situation. Since the early nineties the education systems of the Central European region have faced - and are still facing - important, if not insurmountable challenges. The radical changes of the political and economical structures raised new educational and training needs from qualitative as well as quantitative point of view. The massification of the education system, especially the tertiary education system proved to be a basic tendency of the democratic systems in the developed countries and it became one of the major objectives of the Central European countries. On the other side privatised market economy generated new demands for curriculum, for new forms and methods of education. The grandiose programme of "PHARE Multi-country" started in 1993-94 by launching a pilot project and later on, not without administrative obstacles, a massive follow-up project was accepted by the European Commission. Elaboration of a harmonised ODL development strategy for the 11 "PHARE" countries, establishment of National Contact Points, 40 of well-equipped ODL Study Centres, training of hundreds of teachers and professors in different fields of ODL (managers, curriculum developers, tutors, and others), course development projects, several professional meetings, development of strategic studies – all these were very important outcomes of the PHARE MCC programme.

Exactly the time period of this PHARE programme has brought dramatic development into the ODL activities of all HEIs in the world – multimedia tools and networking, on-line solutions, e-learning framework have been elaborated in these years. Enthusiasm of CEE ODL experts was supported by encouraging messages of our EU partners, saying: in the field of e-learning, we can stand at the start-line, together with western colleagues, without the usual stereotypes: the "need for closing up".

Not only the huge number of indicators were amazing – results of the programme were not only promising, but in a unique way, intensive cooperative actions led to the building of a professional community of innovative ODL and e-learning experts. But as usual, as soon as the programmes were completed and financial support was closed, results of these programmes eroded quickly and stability and sustainability of the newly formed ODL units became uncertain, and highly dependent upon the intention and involvement of host institutions' management.

As the only operable solution, it has been recognised: new and new EU programmes have to be addressed, planning proposals to be built on each other, providing frameworks and support for continuing methodological and content development and international networking.
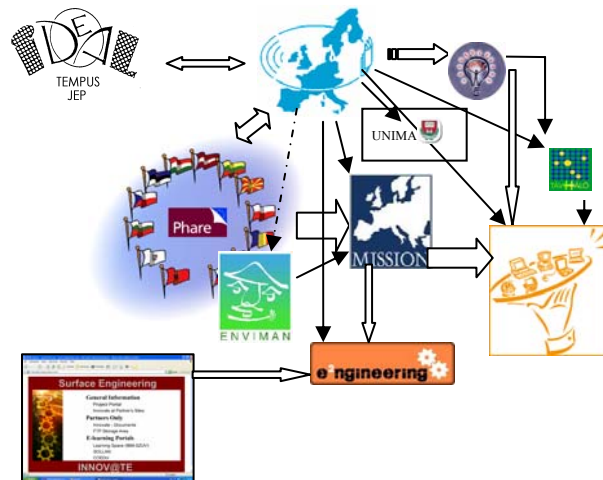

Fig. 1. Strategic development of ODL/e-Learning at the University of Miskolc, developed and financed project-by-project

As illustrated in Fig. 1. the majority of the projects accomplished with active collaboration/ coordination of the University of Miskolc was built on permanent, long-term partnership, based on successful previous, wide range collaboration of partners representing the two networks, the former PHARE Multi-country and the prestigious EADTU (European Association of Distance Teaching Universities). Two follow-up projects, both in Minerva programme (MISSION and **e-Taster**) aims at stabilising networking, utilizing the huge potential and expertise of East-West collaborative networks. Content development has been addressed by a further project, titled **e2ngineering**, aiming at joint development in vocational training.

e-Taster courses are short, bite-sized learning programmes, offered free of charge for anyone, who is interested in trying WEB-based, advanced learning methodology. They are not simple demo versions, but were developed as independent, short, but fully functional courses. Partner HEIs have developed models of providing ODL courses offering different levels of learners' support (both in language and methodological aspects) and also different models of international networking in course delivery.
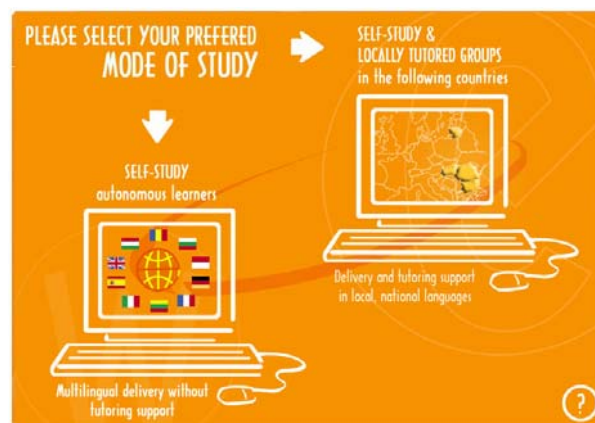

Fig 2. Entrance screen of e-Taster project – learners have the option of learning fully autonomously using English as a master language, supported by other languages or in locally tutored groups, using their native language, but having access to all other language versions as well.

E2ngineering project focuses on a specific thematic area, developing a new methodology of advanced, multilevel and multilingual vocational training programs in the field of computer aided engineering. The common strength of the two projects is the innovative solution of multilingual delivery.

Multilingualism

It was recognised, that even if other circumstances are all optimal, language restrictions mean a very serious obstacles for HE institutions as well as for individuals, wishing to teach and learn on a more and more globalised HE area of Europe. Language skills of citizens of CEE countries are much poorer – very low ratio of our population can speak foreign languages. That is why, some former PHARE ODL Centres and their host institutions have been focusing on possible solution for establishing user-friend, advanced multilingual learning environment and models of transnational networking for multilingual delivery of jointly developed courses, since the late 90s.

Multilingual presentation of the training materials in e2ngineering project offers special added value regarding the simultaneous improvement of technical English skills and professional knowledge of participants. Moreover, international collaborative learning environment will encourage the participants to continue their professional networking via the advanced ICT technologies, used as learning tools in the course.

Whenever a course is developed and offered in more languages, it means separate language versions of the course materials from which student can select – and in a better case, also the navigation language of the e-learning framework can be modified for the selected languages. The e-learning framework, applied in all of our e-learning activities, named Coedu is still under permanent development, widening the range of languages to be supported in two, different levels.

Navigation language of the overall system can be selected by the user, when entering the system. Within the mentioned two projects we offer EN, HU, SK, PL, RO, BG and LT languages, but the system can handle also RU as navigation language.

The other level of multilingual delivery relates to content elements. In the COEDU system, content elements may be displayed in the following languages: EN, HU, RO, LT, BG, PL, D, F, IT, ES, SK and RUS. Learners may switch between the language versions within the courses, paragraph-by-paragraph, while system administrator may define the order of languages: any of them can be selected as "master", while others are hidden and will be displayed in pop-up windows, when clicking on their flag symbol (see Fig 3).

Fig. 3. Innovative solutions for multilingualism: selection of navigation language (a) and presentation of core content (b)

Summary and conclusions

Higher Education in Central and Eastern European Countries faces several challenges, difficulties, shortages and barriers. The Bologna process, the increasing demand for fast response to the needs of their restructuring economy, changing mission of HEIs transferring from elitist to mass-education, wide-scale implementation of life-long learning concept – all demanding reforms to be implemented in the same time, in a period of economic restrictions and shortage of financial background.

Flexible e-learning methodology may be considered as the most suitable tool for enhancing educational networking, offering several benefits of increased accessibility, cost effectiveness, individualisation of learning process, widening inclusion and balancing regional, social and cultural differences. Developing innovative methodology and ICT applications may enhance our chance to play active role in the mainstream of European HE progress. Among these innovative solutions, the unique methodology of multilingual presentation of parallel language versions in on-line delivery has been developed and applied in some joint projects.

HEIs of Central and Eastern European countries have to recognise: they need their login and password to get access to the real and the virtual European Higher Education Space – we have got our login names, as new member or candidate countries – but we should remember the password as well: "innovation".

Mária KOCSIS BAÁN
University of Miskolc
North Hungarian Regional Distance Education Centre
m.kocsis.baan@uni-miskolc.hu

Implementation of e-Training Services in Lithuania in the Context of International Study Programs

Introduction

The last ten years have been marked with great changes in the world of ICT. The rapid developments in the Internet, multimedia, satellite broadcasting technologies, digital audio, digital video, mobile telephony and television challenge almost all spheres of social life, especially in the context of e-services system building. A large variety of e-services are already provided to Lithuanians, including e-banking, e-financial services, e-declarations, e–health, e-labour, e-tourism, e-information, e-business, e-leisure, e-trade and so on. However, one of the most important areas in e-services is e-learning/e-training. Such services provide wide set of educational opportunities for educators and students, starting with general information, browsing library catalogues, and finally learning at most convenient time and place. Further in this article is explored the need for e-training and are given few examples of implementation of e-training services in Lithuania.

The need for e-training services in Lithuania

A study "E-Learning Service Need Studio" investigated an opinion of RIAP's (Rural Internet Access Point) users about distance learning in Lithuania. The study was done in September – November, 2005. Method of investigation was an opinion survey. The questionnaire was placed in RIAP's Web-page because of the target group which is RIAP's users. 1384 respondents have answered the questionnaire.

Most important answer to question if RIAP's users would like to study in a distant way (see fig. I) showed that two thirds of users would like to do it. This means that e-learning services have enough potential users and would be used in the future.
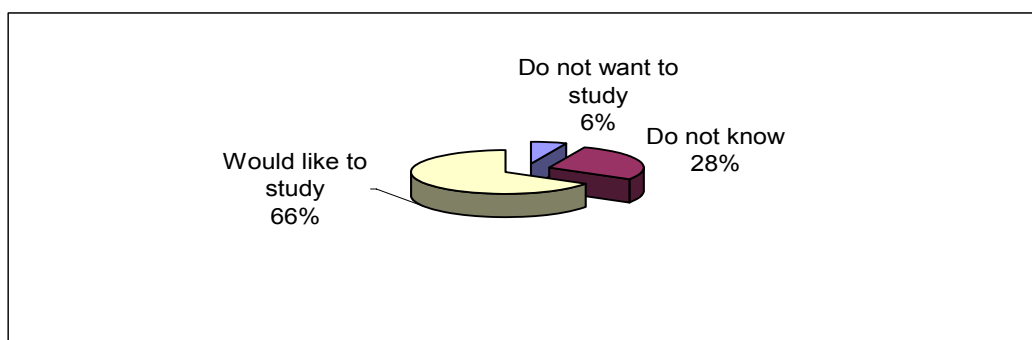

Fig. I. Would you like to learn in a distant way in the future? (in percent, N=1384)
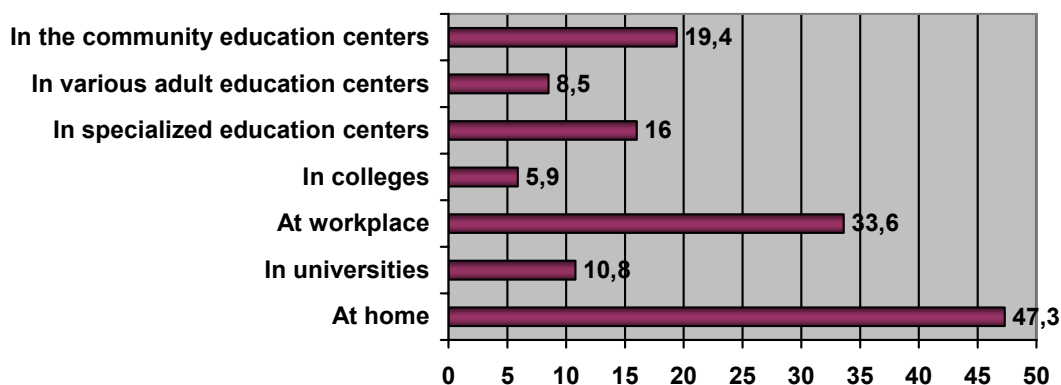

Fig. II. The most convenient place to study in the DL way (in percent, N=1384)

Considering the most convenient place for distant studies, the majority of students (47,3%) indicated home (see fig. II). However every second RIAP's user, willing to study in a distance way, has a full-time work, therefore another large part of users (33,6%) is willing to study at work place. This means that at least 80% of respondents need e-learning services in case they would be able to study in distance from education institutions and combining work with studies. Those, who are willing to study in universities or colleges, are younger, living in cities and having more free time.

The most acceptable forms of e-training are: courses, presented through the Internet (41,6%) and combination of various DL forms (38,6%). However main obstacles to study in electronic way are as follows: financial difficulties, limited technical facilities, lack of information about distance courses and of computer using skills. Nevertheless respondents have enough motivation to study in distant way as this way has more possibilities than traditional (see fig. III.).
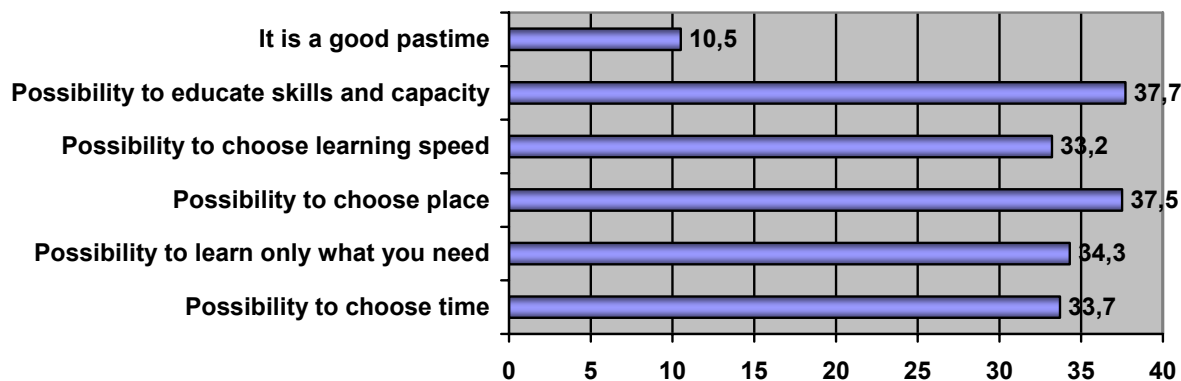

Fig. III. Reasons why respondents choose DL (percent, N=1384)

Respondents also indicate that the main aims of distance learning should be self education, qualification improvement, career reaching and preparation for the profession, an opportunity to have more freedom for self-expression and to get a certificate. Very important aims are also course subject and active communication with fellows. RIAP's users are most likely to take distance education courses in foreign languages, computer sciences, social sciences, management and administration. Therefore, as we see from the survey data, there is a demand for e-training in Lithuania. And what is supply?

Implementation of e-Training Services in Lithuania

International programs at master level: International Master in Multimedia development

The project called IMM – "**Online International Master in Multimedia**" was proposed by "Politehnica" University of Timisoara in Romania and proved in Socrates Erasmus Curriculum Development program. The other partners of this project are from several different countries: France, UK, Hungary and Lithuania. All the partners have developed analytical research to establish the training needs. The research has shown that there is a strong need at local, national and European level for training in multimedia. Graduates with a multimedia degree are in demand both as employees of large companies and as self-employed consultants on a freelance basis.

Main objective of this project is to develop a new study program at Master level in the area of multimedia that can be applied and adapted by all the countries, ensuring the same level of skills all over the Europe. The IMM is two year on-line program (according to current national regulations) will be delivered using open and distance learning technology and will involve course-work and a graduation thesis that is made up of a written thesis and a practical component. The curricula of the program consist of 8 core courses and 19 elective courses. The first three semesters of program are completely dedicated to lectures and project work, while the fourth semester is divided between internship and master thesis work. The studies will comply with the Bologna agreement and will be worth 120 ECTS, 90 from course work, 15 internship and 15 the thesis.

The Language of instruction is English. Students will be enrolled in their home country university or in the nearest partner university abroad, according to their agreement. Lecturing and tutoring will be basically offered on-line. However, there will be face-to-face meetings which will be offered locally, within the registering

university or the local support centers. Each course will be supervised by a course leader, who will be responsible for running the course internationally and for developing the course materials. After completing all the assessments and the final thesis defense each student will be awarded with a national Master Diploma (issued by the university where s/he is registered) and an International Certificate signed by all the partners.

International programs at VET level: teacher and trainer competence development and certification

EU Leonardo da Vinci project called **EVETE - "Empowerment of Vocational Education and Training by Improving the E-Learning Competences of Teachers and Trainers"** (LT/05/B/F/PP-171010) – was approved and started in October, 2005, by European partnership, having representatives' institutions from Belgium, Germany, Greece, Finland, Hungary, Italy, Lithuania and Sweden. Partners started joint activities to develop the contextual tools and training courses based on individualisation and diversification of learning content divided into small learning units.

The project is focusing on a new and highly innovative didactical and pedagogical approach – Learning Objects (LO) – smallest useful parts of information/learning defined by metadata – to meet a single learning objective. As training material will be composed from independent LOs, participating countries will be able to build from them their own training curricula through selecting only the necessary parts of learning material, and teachers and trainers at VET institutions will be trained on the new approach of flexible teaching and learning, and how to meet individual learning needs of their learners. Moreover, institutions will individualize learning content for single learner's needs, and teachers will be trained how to design, edit and deliver the training based on the new approach.

EVETE project responds to European priorities, to research results, and it aims at providing teachers and trainers at education institutions with understanding and competence in diversification of training based on individual expectations and abilities to manage training content. Creation of European training culture and virtual community through course service package will represent a new form of communication and cooperation. Cooperation in recognition of teacher and trainer competences will be an interesting example of teacher competence validation process and cooperation of education institutions all over Europe.

Conclusions

The opinion survey shows, that there is a demand for e-training in Lithuania. However, the main obstacles to study in electronic way are as follows: financial difficulties, limited technical facilities, lack of information about distance courses and of computer using skills. To overcome the difficulties and to create opportunities for teachers and learners to organize and participate in e-training programs, necessary contextual conditions should be developed and improved. Improved context would influence smooth e-training performance, and would bring benefit for the learners in the form of satisfaction with individual-focused learning process.

References

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Danguole Rutkauskiene
Kaunas University of Technology
Lithuania
Danguole.Rutkauskiene@ktu.lt

Ramunas Kubiliunas
Kaunas University of Technology
Lithuania
Ramunas.Kubiliunas@ktu.lt

Airina Volungeviciene
Kaunas University of Technology
 Lithuania
Airina.Volungeviciene@ktu.lt

Egle Butkeviciene
Kaunas University of Technology
Lithuania
Egle.Butkeviciene@ktu.lt

Towards transational virtual study circles: an introduction to the E-report project

Abstract
E-report is an European Union project aiming at the constitution of a repertory of reference material with regard to the development of innovative methods in the field of e-learning system for educational projects and also for distance learning in VET. The activities of research, experimentation and analysis are combined with the use of ICT with massive use of tutoring activities, learning groups and transnational virtual study circles.

Introduction

The present paper is a work-in-progress report about the project[1] **"E-report. Transnational virtual study circles: e-learning supports for tutorship and learning groups"**, that is funded by EC (Leonardo da Vinci Program, EAC/11/04, 2005 – Procedure C) and involves institutions belonging to five European countries (Austria, Italy, Romania, Spain and Sweden).

The network of the project is composed by:
- University of Palermo, Center of Guidance and Tutoring, Palermo, Italy.
- University of Salzburg, Centre for Flexible Learning, Salzburg, Austria.
- SMC Study and Management Center, Saalfelden GmbH, Austria.
- COEPA/ The Business Confederation of the province of Alicante, Spain.
- EUREKA - Training Center, Palermo, Italy.
- «Politehnica» University of Timisoara, Romania.
- Centre for Continuing Education of Timisoara, Romania.
- (GVU) Högskolan på Gotland/Gotland University, Sweden.
- Department of Learning, Informatics, Management and Ethics (LIME) - Karolinska Institutet (KI) – Sweden

E-REPORT is aimed at setting up a communitarian repertory of reference material in the field of e-learning system for distance learning in VET. It refers to activities of research, experimentation and analysis with regard to the development of innovative methods and contents, aiming at setting up a method of distance learning system, combining the use of ICT with tutoring activities, learning groups and transnational virtual study circles.

The specific goals of the project are:
- to analyse the developmental trends of the introduction of the ICT for training/education systems of 4 European countries (Austria, Italy, Romania, Sweden);
- to explore the relations between the training and educational supply of the partner countries and the main needs of the national VET systems in the field of e-learning and distance learning;
- to set up a repertory of shared educational and guidance materials and tools, useful for the transnational online education and training;
- to learn how to import standard compatible content in the existing e-learning platforms;
- to optimize a software platform LMS for the management via intranet and Internet of the transnational virtual study circle, in which the repertory realised through the project activities will be placed;
- to use in experimental way the reference material for educational and guidance activities with students and teachers in order to develop standardized learning solutions in this field;
- to test the validity of educational/training methods and tools of the transnational virtual study circle;
- to promote cooperation between EU countries, private and public, universities and vocational centres in this field;
- to transfer the developed method to the field of vocational training

Description of the project

Four work-packages are contributing to the achievement of the project goals.

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[1] For information and clarifications please contact: info-ereport@orientamento.unipa.it

Work-package 1 (WP1 - <u>context analysis</u>) is aimed at comparing and studying the developmental trends of online courses in the national VET systems of the partners, a preliminary study will be conducted. From the results of this study, the main needs of the VET systems will be identified and compared between four European countries. In order to accomplish these goals two main actions will be carried out.

<u>Action 1</u>: to assess the features of the online courses provided by universities and vocational institutes through an on-line questionnaire that will be administered to a sample of 60 universities and vocational centers (see table 1). Three kind of questionnaires have been developed: (a) one for Responsibles of the online courses of Universities and Vocational Centers; (b) one for Teachers/Trainers of the online courses of Universities and Vocational Centers; (c) one for Students of the online courses of Universities and Vocational Centers.
The questionnaires will be administered to a sample of 150 responsible and teachers/trainers and of 300 students belonging to the countries of the project (see table 2 and 3).

<u>Action 2</u>: to identify the main needs of the students attending Us and VCs with regard to the field of e-learning. A questionnaire will be developed, aimed at assessing: (a) their needs (e.g., the improvement of occasions of virtual mobility), (b) their interests (e. g., the kind of courses they want to be enhanced); (c) their attitudes towards the use of ICT; (d) the influence of the lack of computer-based competencies on attitude towards on-line courses.

The questionnaire will be administered online and by post to a sample of 320 students selected from the sample of universities and vocational school indicated above, 80 students for each country (50 of universities, 30 of vocational schools) and will be composed in the same ratio of students who never attended an online course (N=160) and students who attended an online course at least one time (160).

Finally, phone interviews with administrators, experts, teachers and trainers (N=52) will be performed, aimed at recognizing some indicators of the need of enhancing the online courses supply of each country.

Work-package 2 (WP2 - <u>production of guidance and educational tools</u>) is aimed at producing educational, guidance and training materials in digital format, suitable for the distance learning via the Internet and combining methodologies such as e-tutoring, peer-tutoring, learning groups and transnational virtual study circles. This set of materials (4 videos and 10 online courses) will be produced on the basis of the international exchange and the dissemination of good practices in the field of distance learning.

The video will be 20 minutes long and will introduce the University' e-learning offers. It will be divided in chapter and will be available through the Internet, using the webTV streaming television channel developed by the University of Palermo (Sajeva, Lo Coco & Fidora, 2006), but also on DVD to be suitable for students in home players. The on-line streaming version of the video will be made available using Open Source file format to improve quality and shareability of the content itself.

Each University will produce two courses, built around the e-learning concept, to be used on a LMS platform stressing on the quality of the teaching files and on the interaction between users and activities that will be made on-line. Tutoring will be the key factor of each e-learning action developed during the project.
The University of Palermo has released a specialized version of its own LMS, named Tutorfad (based on the Moodle LMS)[2], to let the E-report group has it's own development and exchange platform and to test the courses developed during the project.

Work-package 3 (WP3 - <u>testing and evaluation</u>), the shared repertory of guidance and educational tools will be tested with a sample of teachers and students through the use of the LMS. Furthermore the transferability of the repertory to the field of vocational training will be experienced. In order to accomplish these goals two main actions will be carried out.

<u>Action 1</u>: testing of the repertory with a sample of 120 students attending the courses of the universities of the partnership. For each course (8), a target group of 15 students (10 student belonging to the country that developed the course and 5 belonging to the other countries of the partnership - "virtual mobility students"). The results of the testing phase will contribute to define the final configuration of the LMS and of the repertory of the transnational virtual study circle.

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[2] http://www.e-report.unipa.it

Action 2: the repertory will be also experienced with a sample of students attending online courses of vocational centers. For this purpose, 5 among vocational centers belonging to the countries of the partnership will select a course from the repertory; the on-line course will be tested to a sample of 15 people belonging to the target group of centre (total sample n = 75). Results will be assessed in order to understand the opportunity to generalize and transfer the repertory to the vocational training field.

WP4 (Valorisation Plan). The project foresees a valorization plan during its entire life, composed by activities of exploitation and dissemination of intermediate and final results.

As regards Exploitation the following actions will be carried out: administration of questionnaires and evaluation schedules; analysis of the needs of the students, trainers/teachers, administrators; realization of forum groups; evaluation and the monitoring of the training methods in U & VT; realization of focus groups with the end users; stakeholders involvement and consultation

As regards Dissemination: reports; participation to conferences; transnational meetings; web sites[3]; scientific publications; the realisation of guidance activities aimed at promoting the project's output; the realisation of a biannual e-newsletter in English language; the distribution of CD/DVDs.

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Inguglia Cristiano
Università degli Studi di Palermo
Centro di Orientamento e Tutorato (COT)
University of Palermo, Centre of Guidance and Tutoring

Sajeva Marco
Università degli Studi di Palermo
Centro di Orientamento e Tutorato (COT)
University of Palermo, Centre of Guidance and Tutoring

Lo Coco Alida
Università degli Studi di Palermo
Centro di Orientamento e Tutorato (COT)
University of Palermo, Centre of Guidance and Tutoring

Fidora Dario
Università degli Studi di Palermo
Centro di Orientamento e Tutorato (COT)
University of Palermo, Centre of Guidance and Tutoring

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[3] The official project's web-site is http://www.ereport.unipa.it/website/